THE PENNSYLVANIA STATE UNIVERSITY
SCHREYER HONORS COLLEGE

THE SAM AND IRENE BLACK SCHOOL OF BUSINESS

CEOS IN THE MEDIA: THE IMPACT ON STOCK

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SPRING 2013

A thesis
submitted in partial fulfillment
of the requirements
for baccalaureate degrees
in Finance and Accounting
with honors in Finance

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ABSTRACT

In this paper, we examine the share price response to announcements of CEOs and other top executives receiving acknowledgement in the media. We derive our data from *Time* magazine's annual "Time100: The Most Influential People in the World" list and *Treasury and Risk's* annual list of the "100 Most Influential People in Finance." To determine the results, we formed portfolios for each of the lists and matched them to an S&P 500 portfolio. Using the stock returns, we find that in the short-run, there is no impact on the *Time* portfolio and a negative impact on the *Treasury and Risk* portfolio. In the long run on a risk-adjusted basis, *Time* outperforms the S&P 500 by a greater magnitude than *Treasury and Risk*.

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Introduction

Investing, especially in the stock market, is an action in which virtually anyone can participate. Most people in the workforce are involved with investing to some degree, since defined contribution retirement plans have increased in popularity. According to *The Week* magazine, in 2012, over 50 million people have 401(k) plans, the most popular defined contribution plan. This plan is funded by investing in assets, primarily in the stock market. Employees are required to choose either specific stocks, or broad portfolio categories, such as aggressive or moderately aggressive, that they want in their portfolios.

With the emergence of companies like E*Trade and Scottrade, the need for a personal investor has decreased. If someone does not have a retirement plan, wants another portfolio in case his/her retirement portfolio does not provide enough income, or is investing for sheer fun; fewer professionals are being involved with the process since websites have simplified and minimized the steps needed for investing.

When investors are venturing out on their own, do they actually use statistics and charts to detect patterns (technical analysis), or use financial statements and economic factors (fundamental analysis) when choosing their investments? Or, is notoriety more important? Does the fact that a company's top executives are in the spotlight affect the perceived value of the stock?

The primary objective of this research is to determine whether the top executives impact shareholders returns. Most people have heard of the advice*, "just because it is a good company, does not mean it is a good investment."* But, do people actually listen to this advice? Or, does the fact that the executive has good press in the news influence investors' choices?

Pessimists may exist in the market who believe that since a company's chief executives are in the news so much, they are not spending enough time in the office. Instead of supervising their subordinates and making sure the company is being run correctly, they may be perceived to be spending too much time at social and red carpet events. Such investors may determine that publicity is a negative signal that the executives are not doing their job adequately. Therefore, the potential exists that a negative reaction may occur with stocks underperforming as a result of their CEOs being in the public eye.

Using both a popular magazine's and a scholarly magazine's list of 100 top influential people, company executives were selected each year from both lists for a specified date. A sample of seven years (2005 to 2011) was used for *Time* magazine, which publishes its "Time100: The Most Influential People in the World" list, was the selected popular magazine. The journal, *Treasury and Risk*, which publishes its "100 Most Influential People in Finance" list, was the selected scholarly magazine and had a sample of five years (2007 to 2011). Since these executives are perceived as good leaders, this research will attempt to discover if investors find value in the selection announcements when selecting stocks. To determine short-term affects, we will investigate stock price reaction to the announcement of selection, while holding period return differences will be used to signal long-term effects.

The following section documents previous literature followed by a description of hypothesis, then a sample of data and methodology. A section on the results and overall conclusions closes the paper.

Literature Review

Almost every investor, no matter the level of expertise, is usually under one of the two main schools of thought for selecting securities: fundamental or technical analysis. Jordan, Miller, and Dolvin (2012) define fundamental analysis as examining a firm's accounting statements and other financial and economic information to assess the economic value of a company's stock. So, not only do they examine the financial statements, fundamentalists research information regarding management quality, products, and also product markets. Strong (2009) points out if a fundamental analyst believes the price of a stock is too high, he/she will not invest in it. Factors like excellent management or high growth potential do not matter to these investors if they feel the stock is overpriced. Jordan et al. define technical analysis as using past price data and other nonfinancial data to identify future trading opportunities. Technical analysts believe in supply and demand, so if the market is willing to pay a certain price for a stock, then the stock is worth that amount. This school of thought receives less scholarly research than its counterpart, thus, less investors describe it as credible. The investors that use this method have a wide variety of techniques from which to choose. Jordan et al. explain that technical analysts use technical indicators to search for bullish (signals the market is on its way up) and bearish (signals the market is on its way down) indicators to determine which action to take. These figures are used to determine when the market should reverse (if presently bullish, when will it be bearish?), so they can take the appropriate action (either buy or sell stocks).

In their book, Jordan et al. describe some of the most popular technical analysis techniques. Two of the most common technical indicators are support and resistance levels. A support level is the lowest price at which a stock should trade. A resistance level is the price at which a stock should not exceed. Another common indicator they explain is the advance/decline line. For a specific time frame, this indicator shows the difference between advancing and

declining stocks, with the results shown on a line graph. If the slope is negative, the market is bearish. If the slope is positive, the market is bullish.

Technical analysts are referred to as "chartists" because they frequently incorporate charts into their research. The Open-High-Low-Close (OHLC) chart is one of the most popular, which uses the daily open, high, low, and closing prices of stocks to determine patterns. Moving averages are another popular chart which determines price reversals. These charts are the average closing price for a fixed period. Every time the latest closing price is added to calculate the average, the most distant closing price is dropped. There are two types of moving averages: simple (where each day receives the same weight) and exponential (where more weight is given to the more recent prices).

Many different types of investors exist, each having their own set of portfolio objectives. Growth and value investors are the two most common types. Growth investors buy stock of leading edge companies; these companies are supposedly unique or the best in their respected fields because they have the technology and innovation that their competitors lack. Strong (2009) mentions that these stocks tend to do well profitability wise with their stock price continuing to rise.

Characteristics that growth investors seek in stock selection include high profit margins, triple-digit revenue growth, accelerated earnings growth, and innovative management. As previously stated, stocks with these characteristics usually come with a high stock price (Google and Apple have stock prices per share of over $750 and $450, respectively as of January 29, 2013). According to finance.yahoo.com, these stocks also tend to have low payout ratios because the companies need to retain their earnings to continue their growth. Growth investors take many more chances than value investors, their counterparts, who tend to be more risk adverse. Thus, growth investing is more risky and tends to do well in times of economic prosperity.

Value investors differ from growth investors preferring stable stocks and ones with a relatively "cheap" price. Value investors believe these stocks are undervalued and are likely to increase in price in the future. Therefore, investors perceive these stocks as "bargains." Strong (2009) describes some characteristics of value stocks including low price to earnings ratios and low price to book ratios. These stocks tend to have higher payout ratios, meaning they distribute relatively more dividends to shareholders. The general rule in finance says the more risk undertaken, the higher the expected return. Value stocks break this notion. Research has found that value stocks are more successful over longer time horizons than growth stocks.

Some investors think that there is not much difference between growth and value investment strategies. Warren Buffet, arguably the most famous Benjamin Graham style investor of the 21st century, believes growth and value investing go hand-in-hand. Benjamin Graham style investors also look for undervalued stocks. Unlike other investors, Benjamin Graham investors use the buy and hold strategy and hold these stocks in their portfolios for the long term. Some characteristics for stocks these investors chose include publically-traded companies for at least ten years, low debt to equity ratio, and an increasing profit margin for a five year period. Benjamin Graham investors usually perform a "deeper analysis" than other investors and tend to know the companies they are investing in as well as company insiders.

Contrarian investors are investors who refuse to follow the crowd. These investors tend to do the opposite of what the majority of investors are doing. As described on finance.yahoo.com, if the most popular portfolio formation strategy currently consisted of large-cap value stocks, then contrarians would build a portfolio of small-cap growth stocks. Their reasoning for doing this is that if everyone expects something to occur, it probably will not happen. Also, if a better type of investment emerges, most investors typically would not have enough cash to invest in it immediately, but most contrarians would. Even though contrarians do not like to follow the pack, they do tend to focus on undervalued stocks, just like many other

types of investors, which show that no matter the investment strategy, some characteristics work for all.

Curran (2010) explains that many recent events in the stock market have made many investors wary of fundamental methods of investing. He argues that many investors are turning to momentum investing, where investors take advantage of stocks that change or evolve over time. Their methodology is relatively simple: buy stocks that are already increasing. Momentum investors focus on the short term, as opposed to other, more traditional investors who are usually more long-term oriented. Momentum investors believe that a stock's recent track record is a good predictor of the short-term future. Since this type of investor focuses on short-term opportunities, and the selection of stocks involves much speculation, many people perceive these investments as relatively risky.

Not only are there many types of investors, but each investor also has a different objective in mind when creating a portfolio. Strong (2009) describes the stability of principal objective as the type of investor who wants to minimize risk and therefore focuses on preserving the principal amount invested. This conservative objective will provide the smallest return for the investor. An example of an investment fulfilling this objective would be a certificate of deposit (CD). If invested for a certain period of time, the investor will gain little interest, but will have the guarantee that no money will be lost (CDs are FDIC insured).

The income objective is similar to the stability of principal, except this objective is not as conservative. With income, Strong (2009) states, "there is no specific proscription against periodic declines in principal value." Investors with this objective will invest in interest-rate sensitive securities. Therefore, if the investor does not hold the security to maturity, then the investor could experience a loss. If the investor does hold the security to maturity, then the investor will recognize a gain because of the interest realized. An example of an investment fulfilling this objective would be a corporate or government bond.

The growth of income objective centers around one of the two key concepts in finance: the time value of money, which means a dollar is worth more today than in the future. Strong (2009) describes that the growth of income objective consists of a portfolio invested in both debt and equities securities. In the beginning, a portfolio with this objective will have a lower payout than a portfolio with an income objective, which consists of all debt securities. Unlike the income objective, the growth of income portfolio grows over time and eventually its payout will be higher than the income strategy.

For this objective to be successful, Strong states the fund will have to grow annually with at least the rate of inflation. Also, part of the original principal must have some capital appreciation. Equities are risky securities and thus tend to generate higher returns. The presence of equities in the growth of income portfolio helps the strategy payout more annually than the income portfolio in the long run.

Some investors do not rely on their investment portfolios to provide them with any income. Investors in this situation usually would rather have their portfolio continue to grow each year instead of receiving income. Strong (2009) describes this objective as capital appreciation. Retired couples are the perfect example of this type of investor. Sometimes, retirees receive enough pension and/or Social Security income to live on, so they want their investment portfolio to have growth so they can leave it to their children and grandchildren.

Currently, there is a tax benefit for the capital appreciation objective. Capital gains are not taxed until they are realized. This situation differs for interest and dividends which are taxed immediately. So, until an investor physically sells the stock, a one dollar capital gain is worth more than a dollar of income. Capital gains get taxed at 15percent, a lower tax bracket than for most investors, which many shareholders find appealing.

Human behavior is another important consideration in investing. According to the efficient market hypothesis, people should behave rationally while investing, meaning they

should not put any type of human emotion into their investments. Barber and Terrance (2001) determine this not to be the case. According to their research, people, especially males, do not behave rationally, and can exhibit overconfidence.

Joe, Louis, and Robinson (2009) find that the average individual investor and professional investors react to news differently. In their research, individual investors overreacted to the *Business Week* publication of the worst board list. Their overreaction caused the stock prices of the firms mentioned in the article to go down. On the contrary, institutional or professional investors purchase these stocks, believing that the publication forces the firms to reorganize and fix their problems. Therefore, because institutional investors are buying the stock, they are increasing its demand, which in turn causes the price of the security to rise.

Kornictis and Kumar (2011) investigate the relationship between investor age and shareholder returns. They find that older investors have less risky portfolios, rely more on diversification, and do not trade very frequently. This finding makes sense since their portfolios are most likely their main, if not sole, source of income. Thus they do not want to take unnecessary risks because they cannot afford large losses. Since older investors are not risk takers, they tend to earn 3 to 5 percent lower annual return than younger investors, on a risk-adjusted basis. But, even though they earn lower returns, older investors still show greater knowledge of investing and do not follow biases as much as younger investors. Kornictis and Kumar conclude that even though older investors usually have more knowledge, they hit their investment-skills peak near age 70. After that, cognitive aging occurs, and they no longer exhibit as effective decision-making skills.

Lewellen, Lease, and Schlarbaum (1977) are among the first to study individual investors' behaviors. They find that investors that agree most with the statement, "I like to take substantial risks in order to realize significant financial gains from investments," have the highest number of short sales, options, and the smallest number of income stocks in their portfolios.

They are also the ones who spend the most time on their analysis and decision making. Lewellen et al. discover that these investors also have some degree of overconfidence, which these researchers consider a necessary trait for the risk-taking associated with this group of investors. Risk-taking investors need a lot of confidence in order to believe they can predict the market since they trade more frequently.

DeBondt and Thaler (1985) highlight criticisms of the efficient market hypothesis. In their findings, individuals have the habit of putting more emphasis on recent data and forgetting or under-weighing past data. Investors also tend to overreact to unexpected and/or dramatic news. This phenomenon shows that humans use emotion when investing. DeBondt and Thaler also seem to find a pattern in the market. Their research shows that a portfolio of prior "losers," meaning a portfolio that didn't earn high returns, was found to outperform a portfolio with "winners," a portfolio that earned high returns, three years after the portfolio was created. After the three years, the losing stocks had earned 25 percent more than the prior winning stocks.

Another scholar notices a second pattern in the stock market. Jegadeesch (1990) states that monthly returns on a single stock are significantly negative first-order serial correlated, meaning that the errors in one term are affected the opposite way the next term. He also states that stocks display significant positive higher-order serial correlation, which he believes rejects the efficient market hypothesis that the market follows a random walk.

Another interesting market behavior is the way it reacts to bad news. Tetlock (2007) concludes that the market returns from negative media are dispersed throughout the entire day, not just at the release of the information. And, these negative returns are usually reversed in the next couple of trading days. Tetlock also discovers that it does not matter if the media used negative or weak words to release information; it has the same effect on the market. So, even if the media tries to "sugar coat" the news, the market reacts as if it did not.

Chan (2009) shows that stock prices may drift for several months following important news. Other instances also exist when the market moves without any news announced. Chang also found that stocks reacting to bad news could negatively drift, or continue to decline, for up to twelve months. Less drift occurs for stocks reacting to positive news. Thus, prices are slower to reflect bad public news.

Different views exist on whether news from the media affects investors' decisions, and if so, whether it is in a favorable way. As a result, opinions differ as to whether media's spotlight on a firm's CEO affects the firm's stock price, meaning that if investors are exposed to news about a company's CEO, do they then go out and purchase that company's stock? Barber and Terrance (2008) conclude that the media does have an impact on investors. Investors are more likely to buy stocks that catch their attention. The reason for this is because of the abundance of choices of common stock to select from on the market. Investors have to limit and screen their choices and one of the quickest and easiest ways to do this is by picking stocks that grab their attention. One of the most common ways this is done is by choosing stocks that are in the media. Barber and Terrance also note that professional investors do not fall into this habit as much since they have so many more resources at their disposal. Therefore, they can find and monitor a much larger range of stocks.

Koh (2009) supports the idea that the media influences investors; Koh's study focuses on the role of the CEO in the media. "Celebrity CEOs," as he defines them, are CEOs that have won recent high-profile awards, such as CEO-of-the-year. Koh finds that these CEOs have a positive impact on their firm's performance. He also states that the media has the power to create a bandwagon effect for the popularity of the stocks of the CEOs' firms.

Grullon, Kanatas, and Weston (2008) discover that media exposure is a good for a company's stock. Investors have a "home bias," meaning they lean towards investing in stocks that they know, stocks that are in the news. Therefore, Grullon et al. conclude that information

from advertisements is vital to the investor's decision making. Huberman (2001) reinforces this idea and states that individuals are more likely to invest in companies that they know. These companies tend to be domestic and are visible in their everyday lives (companies that are local), and those firms that are acknowledged by the media.

Conversely, critics of media exposure believe that high-profile CEOs do not result in better stock performance and thus media exposure can result in inferior returns for investors. Fang (2009) states in her research that stocks that do not have any media coverage outperform stocks with media coverage. This performance is even better for small-company stocks and stocks with high individual ownership. A portfolio containing stocks with little to no media coverage had a 3 percent average higher return per year than portfolios containing high profile stocks. This higher return was also adjusted for various factors. Fang offers two reasons for these results. The first reason is a liquidity-related argument, that mispricing in stocks is only eliminated by trading. Since no media stocks will most likely be traded less, a possible arbitrage opportunity exists that was not corrected by the market. The second reason is based on the investor recognition hypothesis, which states that stocks with low recognition must compensate for not being completely diversified by providing higher returns.

Malmeindier, Ulrike, and Tate (2008), describe the "Superstar CEO" in their study. They define "superstar" status as CEOs who achieve prestigious nationwide awards from the business press. They find that firms with a superstar CEO underperform in the years after the CEO gains recognition for his/her award. For the following three years after the CEO receives his/her award, the firm's return on assets (ROA) decreases as well as the ability for the stocks to meet market expectations. They also determine that after CEOs reach a certain level of notoriety, meaning that they are widely known and featured in the media, they spend more time outside the office, writing memoirs, and sitting on board of directors' chairs.

Meschke and Kim (2011) trace the media's reaction after a firm's CEO is interviewed on CNBC. They discover that initially, media exposure has a good impact on a firm's stock and investors react favorably. This positive reaction only lasts for a short period, approximately three days. For the next ten days, the stock experiences a negative average return. Meschke and Kim conclude that the more people that watched the interview, the higher the negative return.

Agreeing with Malmeindier, Ulrike, and Tate, four researchers Francis, Huang, Rajgupal, and Zang (2008) conclude that the more reputable a CEO is, the poorer the firm's earnings quality. They also find that a highly respected CEO is more likely to manage and manipulate the firm's earnings. The main reason a CEO manages earnings is to give the impression of constant and steady growth.

Hayward, Rindova, and Pollock (2008) are also skeptical about media exposure. They discover that journalists can cause overconfidence in CEOs. This happens when CEOs start to believe their own hype in the press. Hayward, Rindova, and Pollock report that if shareholders also believe the press, they are more likely to continue their investment, so in the short-term, the firm will succeed. But, this could pose a threat for the long-term, especially if a CEO's overconfidence leads him/her to make an unwise decision.

Yermack (2004) finds in his study that media exposure does not always positively impact a firm's stock price. When a firm discloses that their CEO is able to use the company's aircraft for personal use, the stock price drops by an average of 1.1 percent. He also states that these companies underperformed benchmarks by 400 basis points per year. Yermack makes a point that the disclosure of a CEO's personal use of aircrafts might not be the only factor in the stock price dropping. Management might be taking a "big bath" approach, and disclose all the negative information at once (e.g., negative earnings and write-offs).

Hypothesis

After reviewing the literature of CEOs in the media and investors' reactions to CEOs in the media, our central hypothesis is that investors react favorably to the stocks of company's CEOs and other executives listed in *Time* magazine's "Time100: The Most Influential People in the World." With so many stocks from which to choose, investors need a way to start the screening process. Most investors will not have access to complex valuation metrics, so they have to narrow down their selection another way. Investing in equities they are familiar with is one of the easiest ways to accomplish this goal. When a company's CEO is in the media, this indirectly brings the company's stock into the limelight, allowing investors to gain more familiarity. Once an investor hears about this stock as Huberman (2001) states, the more familiar an investor is with the stock, and the more likely they will buy shares and invest in the company.

Although there is evidence that suggests that when a company's CEO and/or stock is in the media, it produces a negative effect on the stock, we do not believe it will apply to the companies mentioned in *Time'*s annual list. Fang (2009) suggests that stocks without media coverage perform better, but this is usually with small-company stocks, or stocks with high individual ownership. The companies listed in *Time* are usually big Fortune 500 companies who have thousands, if not millions, of shareholders.

Even though some investors may read scholarly magazines and journals, like *Treasury and Risk*, we do not believe they buy shares of stock based on the magazine's annual list of the "100 Most Influential People in Finance." Most investors fall into one of the two most popular schools of thought for financial markets: technical and fundamental analysis. Both types look for specific qualifications when investing in stocks. For example, technical analysts review historical stock prices to find patterns and momentum in equities, while fundamentalists look to a company's financial statements to calculate key ratios. Both types of investors are not too

concerned with media coverage, unless it is so drastic that it causes a huge shift in the stock price (e.g., news like Enron "cooking the financial books").

Sample and Methodology

The goal of this research is to determine whether share prices react favorability to companies that have their CEOs recognized in the media. Two separate sample groups are used, one for a popular magazine and one for a scholarly magazine. *Time*, the popular magazine, began publishing its "Time100: The Most Influential People in the World," list annually since 2004 at the end of April to early May. This survey contains all CEOs and other chief officers of publically traded companies honored on the list from 2005 to 2011. The scholarly sample was from *Treasury and Risk*, which began publishing its "100 Most Influential People in Finance," list annually since 2004 on June 1. The sample used for this study contains all firms with an associated executive listed that were publically traded from 2007 to 2011.

Once all of the samples were collected, each executive listed was matched with their corresponding company name and ticker symbol. After these lists were compiled, the Wharton Research Data Services database was used to get each of the stock's PERMNO and CUSIP numbers to put into the CRSP database.

Each sample group (*Time* and *Treasury and Risk*) will be compared to a broad market benchmark, the S&P 500. The two samples are not compared against each other directly since they published their respective lists at different times during the year and have differences in size and readership. *Time* is considered a "popular" magazine that has been around for a longer time and reaches a much bigger audience than *Treasury and Risk*. *Time* magazine was founded in 1923 and has the world's largest circulation for a weekly news magazine with over 3 million subscribers. *Treasury and Risk* was founded in 1991 and has around 40,000 subscribers.

We define the event days as the magazine issue dates. Our tests will be composed of two parts: first, we will use a standard event study methodology and test the abnormal returns of these event stocks using a (-5, +5) event window, methodology outlined by Mikkelson and Partch (1985). Second, we will test the long run (one year after the magazine issue dates until the next release date) stock returns of these stocks and compare them with a benchmark, the S&P 500 Index.

Results

Short-term Effects

We use the announcement effect to determine if there were any short-term effects based on the abnormal returns on any of the stocks whose CEO, CFO, and other financial leaders were published on "Time100: The Most Influential People in the World" or the "100 Most Influential People in Finance." The event date for each magazine was the issue date that each list is published. In this study, we used six different event date intervals, ranging from five days prior to the event date to five days after the event date, to determine if there was any significant change in returns for each of the stocks mentioned. The results for both magazines are shown in Table 3, which reveals that for *Time* magazine, there is no significant cumulative abnormal return (CAR), meaning that in the short-term, investors do not react to a company's top executives being in the media. As for *Treasury and Risk*, Table 3 reveals that investors react negatively to executives being listed in this media outlet, which is shown with negative cumulative abnormal returns with a z-stat statistically significant at a 1 percent level for all event windows except (+1, +5). For example, the (-2, +2) window produces a z-stat of -4.19, statistically significant at the 1 percent level. This means that from two days before the event date to two days after the event date, there

is a strong negative relationship between the announcement of executives in the media and the performance of their respected company's stock.

Long-term Effects

To investigate long-term effects, we form portfolios of *Time* and *Treasury and Risk* securities and compare their annual holding period and risk-adjusted performances to that of the S&P 500 Index. The annual holding period starts with the first issue date for each of the lists and ends with the next publication date, where the portfolio is rebalanced based on the new survey released for that year. Then, a paired differences test is used to calculate the student t-test statistic with n-1 degrees of freedom to determine if statistical differences exist between the survey portfolios and the broad market index.

$$t = d/S_d \times \sqrt{n} \quad [1]$$

where:
d = the mean difference between the daily market and the portfolio returns
S_d = the standard deviation of the difference between the returns each day
n = number of days corresponding to the annual holding period

Table 4 shows that from 2005 to 2012, *Time* magazine achieved annual raw returns almost three times higher than the cumulative raw return of the S&P 500 at 15.127 percent, and was statistically significant at 5 percent. This suggests that in the long run, the stocks listed in *Time*'s list outperform the market. From 2007 to 2012, the annual return for *Treasury and Risk* was 5.20 percent, which also outperformed the S&P 500 Index, but the raw return is not as high as *Time*'s and is not statistically significant.

In order to adjust for risk for these portfolios, we used three measures: Sharpe ratio, Treynor ratio, and Jensens's Alpha, which are shown in Table 4. The Sharpe ratio (1994) measures the excess return per unit of standard deviation in an investment.

$$S = d/s_d \quad [2]$$

where:
d = the daily difference between the portfolio or market return, and the T-bill return, calculated over respective holding periods
s_d = the sample standard deviation of the daily return differences

When comparing two Sharpe ratios, the portfolio with the higher number provides greater excess return relative to total risk taken. As shown in Table 4, both *Time* and *Treasury and Risk* have higher ratios than the S&P 500, with *Time* having the highest. This suggests it has the best portfolio. Even though *Time* is the better portfolio, it is still not statistically significant, meaning that on a risk-adjusted basis, it does not significantly outperform the S&P 500 Index.

The Treynor (1965) ratio measures the excess return per unit of market risk.

$$T = \frac{d}{\beta}\sqrt{n} \quad [3]$$

where:
d = mean daily difference between the return on the *Time* or *Treasury and Risk* portfolio and the T-bill return, calculated over respective holding periods
β = portfolio beta
n = number of days in the respective holding period

Like the Sharpe ratio, when comparing two portfolios' Treynor ratios, the portfolio with the higher value performs better on a risk-adjusted basis. The results for this measure are similar to that of the Sharpe ratio, with both *Time* and *Treasury and Risk* portfolios having greater Treynor measures than the S&P 500 and *Time* having the highest number. Again like the Sharpe ratio, neither *Time* nor *Treasury* had statistically significant higher Treynor measures, meaning on a risk adjusted basis, neither outperformed the S&P 500 by a considerable amount.

Depending on if the portfolio is well diversified or not will determine if the Sharpe or Treynor ratio is applicable. If the portfolio is not well diversified, the Sharpe ratio is best because it measures returns based on the standard deviation, or total risk. If the portfolio is diversified, the Treynor ratio is most applicable because it measures returns based on beta, or market risk.

Jensen's Alpha (1968) uses the Capital Asset Pricing Model (CAPM) to determine the abnormal return of a portfolio.

$$R_{pt} - R_{ft} = \propto + \beta(R_{mt} - R_{ft}) + e_{pt} \quad [4]$$

Positive alphas mean that the portfolio produces an above average risk adjusted return and negative alphas suggest the portfolio produces a below average risk adjusted return. As shown in Table 4, both *Time* and *Treasury and Risk* have positive alphas, but only *Time*'s is statistically significant at 1 percent, which suggests this portfolio generates a significantly higher return than would be predicted based on its level of systematic risk.

Finally, the long-term performance of the portfolios is tested using the Fama and French (1993) 3-factor and 4-factor models, which are pricing models that go beyond CAPM. The Capital Asset Pricing Model (CAPM) (Sharpe, 1964) is a single variable model used to determine the rate of return on an asset. CAPM adjusts the asset for market risk, which is risk that cannot be diversified, i.e. eliminated through diversification. Realizing that adjusting for market risk is not enough, Eugene French and Kenneth Fama created the 3-factor model, which takes into consideration two more factors besides CAPM (Small Minus Big (SMB) and High Minus Low (HML)). The Carhart (1997) 4-factor model is an extension of the 3-factor model and adds one more variable, momentum, to the equation. Both the 3-and 4-factor models are shown respectively as:

$$R_{it} - R_{ft} = a + b(R_{mt} - R_{ft}) + sSMB_t + hHML_t + e_{it} \quad [5]$$

$$R_{it} - R_{ft} = a + b(R_{mt} - R_{ft}) + sSMB_t + hHML_t + mUMD_t + e_{it} \quad [6]$$

where:
R_{it} = the return on each sample stock
R_{ft} = the return on 1-month Treasury bills
R_{mt} = the return on a value-weighted market index
SMB_t = the return on a value-weighted portfolio of small stocks less the return on a value-weighted portfolio of big stocks
HML_t = the return on a valued-weighted portfolio of high book-to-market stocks less the return on a value-weighted portfolio of high book-to-market stocks

UMD_t = the return on the two prior high return portfolios less the returns on the two prior low return portfolios

Both the 3-and 4-factor models are very important when analyzing returns because they eliminate some market anomalies that the CAPM model does not. For one, Fama and French (1994) notice that on average, small cap stocks gain higher returns than large cap stocks and therefore adjust their model using SMB. They also realize that high book-to-market stocks generally have higher returns than low book-to-market stocks, and using HML adjusts for the bias. Carhart (1997) expands on this factor with one more variable, UMD, to account for the spread between the previous portfolios' highest and lowest returns (i.e., a return premium for momentum).

The results are in Table 5. Both *Time* and *Treasury and Risk* have positive intercepts, with both *t*-stats and z-stats statistically significant at the 5 percent level for the 3-factor model. This suggests that both portfolios perform better than expected. Table 5 also shows that both *Time* and *Treasury and Risk* have positive intercepts statistically significant for the 4-factor model, but the two portfolios differ with respect to the *t*-stat. *Time*'s *t*-stat for the intercept is only significant at the 10 percent level, which signals its portfolio does not perform to the level of statistical significance as *Treasury and Risk*, which is significant at the 5 percent level. This is interesting because for all other tests, *Time* outperforms *Treasury and Risk*, but in this measure *Treasury and Risk* had exhibited statistically significant excess returns.

When analyzing the results of our research, we will have to take into consideration the differences in coverage for both of these magazines. *Time* is widely circulated, and deeply rooted in American pop culture. According to the Audit Bureau of Circulations, since its inception in 1923, the magazine has grown to over 3.3 million paid subscribers. *Time* also expanded with three international editions, so people all over the world easily have access to this magazine.

Conversely, *Treasury and Risk* was established in 1991, almost 70 years later than *Time*, and only operates in the United States. This magazine is also geared towards: CFOs, Treasurers, Controllers, and other finance professionals, which limits the subscribers significantly. In fact, according to BPA Worldwide, *Treasury and Risk* only has an estimated 40,000 paid subscribers. Because these magazines have different amounts of coverage, there is potential distortion in our results. For example, since *Time* magazine is so widely distributed, many more people are aware of its annual list and therefore know about the companies mentioned. This could be one factor contributing to the fact that the *Time* portfolio does so well in the long run.

Conclusions

In this paper, we investigate whether CEOs and other company executives' media coverage effects their respected company's stock. We find that investors reading *Time* magazine do not react in the short-term to these executives being in the media. As for *Treasury and Risk*, in the short-term, investors react negatively at the 1 percent level. In the long-term, both *Time* and *Treasury and Risk* magazines' portfolios earn higher holding period returns than their respected S&P 500 portfolios, but only *Time*'s was statistically significant at the 1 percent level.

On a risk adjusted basis, both *Time* and *Treasury and Risk's* portfolios also perform better than their matched S&P 500 portfolios. Both portfolios generate positive Jensen's Alphas, but only *Time's* is statistically significant at 1 percent. When employing the Fama-French models, overall we find similar results. Both portfolios' intercepts are positive and statistically significant at the 5 percent level, except *Time*'s *t*-stat for the 4-factor model, which is only significant at the 10 percent level.

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Tables

Table 1 – List of ticker symbols represented in the *Treasury and Risk* Portfolios

2007	
AAMRQ	LEH
ABN	MA
AXP	MBI
BA	MDT
BAC	MEL
BCS	MER
BX	MHP
C	MHP
CA	MMC
CAR	MS
COKE	MSFT
CSCO	NYX
CZR	ODP
DAL	ORCL
DB	PNC
DBD	PRU
EBAY	PTR
EMC	QCOM
ENB	RBS
FORR	SAP
GE	SEIC
GM	SKS
GOOG	SNE
HON	TEL
HPQ	THC
IBM	TM
INTC	TOC
IRM	VZ
JAVA	WFC
JPM	

2008	
AAPL	JNJ
AIG	JNPR
ALSN	JPM
AVP	LYV
AXP	MCK
AZ	MHP
BAC	MRK
BIIB	MSFT
BLK	NTRS
BLL	PEP
BRK	PG
C	PRU
CA	PX
CAH	RBS
DB	RL
DELL	SAP
FITB	SBUX
GM	SI
GOOG	TLM
GWW	WFC
HBC	WSH
HOT	XRX

2009	
AEP	HNI
AIG	HON
AIZ	ICE
AMZN	INTC
AON	JPM
BAC	LLY
BK	M
BRK	MHP
BUD	MRK
C	MSFT
CAH	NCX
CAL	NTRS
CAR	ORCL
CPB	PAYX
CSCO	PFE
DB	PNC
DFT	SAP
DOW	SEE
EBAY	SI
F	SO
FCX	STI
FLR	TKR
GE	TM
GOOG	WFC
GS	WMT
HBI	WSH

2010	
AA	HBC
ADS	HCA
AIG	HNZ
AMAT	JPM
AON	KBR
BA	KFT
BAC	LIZ
BK	MA
C	MCD
CAL	MET
CAT	MHP
COKE	MRK
COST	MS
DAN	NTRS
DB	RAI
DBD	RDS
DG	SAP
DGX	SUN
F	TM
GE	UPS
GM	WFC
GOOG	WSH
GS	XL

2011	
AAPL	IBM
AIG	INTC
AIZ	JPM
AON	MSFT
ARBA	MTU
BAC	NTRS
BIG	NVS
BK	ORCL
BLK	PEP
C	PRU
CAT	RBS
CBB	SAP
CL	T
CMCSK	TKR
CSCO	TRI
DAL	UBS
DB	UL
DIS	UTX
EVR	VMED
GE	WFC
GOOG	WMT
GS	

Table 1 is a list of portfolios compiled of every public company mentioned in *Treasury and Risk's* "100 Most Influential People in Finance" each year. Note: some lists contained more than one executive for one company, so for the sample size, some stocks were calculated twice.

Table 2 – List of ticker symbols represented by the *Time* Portfolios

2005	2006	2007	2008	2009	2010	2011
APPL	AOL	AAPL	AAPL	AMOV	AAPL	AOL
DISCB	ATVI	BAC	AMOV	BP	BIDU	BAC
EBAY	COST	BRK	AMZN	F	DISCB	CNH
HBC	DISCB	BX	CSCO	JPM	P	DIS
MSFT	GOOG	DCGN	DISCB	TMX	PUK	DISCB
MSO	JPM	DISCB	GE		TSLA	GOOG
NFLX	LU	MSFT	GS			JPM
NWS	MSFT	MT	JPM			NFLX
RIM	NWS	PEP	MSFT			SINA
SNE	RL	TM	NWS			
TM	SHL		PEP			
WMT	VIA		TMX			
WPP	WYNN					
	XRX					

Table 2 is a list of the portfolios created each year from all public companies mentioned in "Time100: The Most Influential People in the World." Note: some lists contained more than one executive for one company, so for the sample size, some stocks were calculated twice.

Table 3 - Cumulative abnormal returns (%) around event date for Time and Treasury and Risk magazines samples

	Time		Treasury and Risk	
Interval	CAR	Z-stat	CAR	Z-stat
(-5, -2)	-0.94	-1.46	-0.61	-2.83***
(-1, 0)	0.21	0.51	-0.81	-4.87***
(1, 5)	0.17	0.38	-0.24	-1.00
(-1, +1)	0.57	1.26	-1.04	-4.29***
(-2, +2)	0.25	0.55	-1.09	-4.19***
(-5, 5)	-0.56	-0.69	-1.67	-4.36***

Table 3 reports the results of the event study for Time and Treasury and Risk samples. Panel A shows the cumulative abnormal returns (in percentage). We test the share price response to the release of this survey beginning 5 days prior to the event date by cumulative abnormal returns (CARs). Expected returns are estimated from the market model. Expected returns are estimated during the interval (−5, 5) and estimates of the parameters are calculated for the trading day period (−301, −46) using 255 trading day year. ***,**, * indicate statistical significance at 0.01, 0.05 and 0.10 level, respectively.

Table 4 – Raw and risk-adjusted returns of Time and Treasury and Risk samples compared to the S&P 500

	Time	Treasury and Risk
Panel B. Cumulative raw return (%)		
Sample (1)	20.623	6.480
S&P 500 Index (2)	5.495	0.961
CAR: (1) - (2)	15.127**	5.520
Panel C. Risk-adjusted performance measures		
Sharpe measure		
Sample	0.0399	0.0101
S&P 500 Index	0.0097	0.0002
Treynor measure		
Sample	0.0666	0.0177
S&P 500 Index	0.0142	0.0003
Jensen's alpha		
Sample	0.058408***	0.0216

Table 4 reports the raw and risk-adjusted returns of Time and Treasury and Risk samples compared to S&P 500. Panel B reports the annualized raw returns for both Time and Treasury and Risk and benchmark portfolios (i.e., S&P 500 returns). For each stock in both Time and Treasury and Risk samples, we calculate its CAR compared to benchmark portfolio over the holding period and use the paired T-test to test whether CAR is significantly different from zero. Panel C calculates the three risk-adjusted performance measures: Sharpe ratio, Treynor ratio and Jensen's Alpha. ***,**, * indicate statistical significance at 0.01, 0.05 and 0.10 level, respectively.

Table 5 – Regression intercept for Fama-French 3- and 4-factor model for Time and Treasury and Risk samples

		Time	Treasury and Risk
Panel D. $R_{it} - R_{ft} = a_i + b(R_{mt} - R_{ft}) + s\,SMB_t + hHML_t + e_{it}$;			
Intercept	Coefficient	0.0411	0.0194
	t-stat	2.58**	2.56**
	z-stat	2.57**	2.37**
Panel E. $R_{it} - R_{ft} = a_i + b(R_{mt} - R_{ft}) + s\,SMB_t + hHML_t + mUMD_t + e_{it}$;			
Intercept	Coefficient	0.0134	0.0136
	t-statistics	1.79*	2.19**
	z-stat	2.17**	2.17**

Table 5 shows the regression results of Fama-French 3- and 4-factor models for Time and Treasury and Risk samples. The 3-factor model is applied by regressing the post-event daily excess returns for asset *i* on a market factor, a size factor, and a book-to-market factor. The 4-factor model is constructed by integrating the Fama-French (1993) 3-factor model with an additional factor capturing the one-year momentum anomaly reported by Carhart (1997). We report their average regression coefficients from stock-by-stock regressions. To determine whether the regression coefficient is significantly different from zero, we calculate the *t*-statistic. The *t*-statistic is obtained by dividing the average coefficient by the cross-sectional standard deviation of the coefficient. ***,**, * indicate statistical significance at 0.01, 0.05 and 0.10 level, respectively.

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